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1. A method of treating a patient that comprises or is at risk of comprising a cell that expresses hTERT, said method comprising administering to said patient a cytotoxic T lymphocyte that kills said cell in an hTERT-specific, major histocompatibility complex-restricted fashion.

5           2. The method of claim 1, wherein said cytotoxic T lymphocyte is autologous to said patient.

3. The method of claim 1, wherein said cytotoxic T lymphocyte is allogeneic to said patient.

10           4. The method of claim 1, wherein said cytotoxic T lymphocyte is generated by activation with an antigen presenting cell that has been pulsed with hTERT or a peptide of hTERT that binds to a major histocompatibility complex molecule.

15           5. A method of treating a patient that comprises or is at risk of comprising a cell that expresses hTERT, said method comprising administering to said patient an antigen presenting cell that activates in said patient a cytotoxic T lymphocyte that kills said cell in an hTERT-specific, major histocompatibility complex-restricted fashion.

20           6. The method of claim 5, wherein said antigen presenting cell was pulsed with hTERT or a peptide of hTERT that binds to a major histocompatibility complex molecule.

7. A method of treating a patient that comprises or is at risk of

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comprising a cell that expresses hTERT, said method comprising administering to said patient hTERT or a peptide of hTERT that binds to a major histocompatibility complex molecule, wherein said hTERT or said peptide of hTERT is processed by an antigen presenting cell in said patient, which  
5 activates a cytotoxic T lymphocyte in said patient to kill said cell that expresses hTERT in an hTERT-specific, major histocompatibility complex-restricted fashion.

8. The method of claim 7, wherein hTERT or said peptide of hTERT is administered to said patient in association with an adjuvant.

10 9. A method of treating a patient that comprises or is at risk of comprising a cell that expresses hTERT, said method comprising administering to said patient a nucleic acid molecule encoding hTERT or a peptide of hTERT that binds to a major histocompatibility complex molecule, wherein said nucleic acid molecule is expressed in said patient so that it can be processed by  
15 an antigen presenting cell in said patient, which activates a cytotoxic T lymphocyte in said patient to kill said cell that expresses hTERT in an hTERT-specific, major histocompatibility complex-restricted fashion.

10. The method of claim 9, wherein said nucleic acid molecule encoding hTERT or a peptide of hTERT is in an expression vector.

20 11. The method of claim 1, 5, 7, or 9, wherein said patient comprises a tumor comprising cells that express hTERT.

12. The method of claim 4 or 5, wherein said antigen presenting cell is a

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dendritic cell or a CD40-activated B cell.

13. The method of claim 4, 6, 7, or 9, wherein said peptide of hTERT binds to a class I major histocompatibility complex molecule.

14. The method of claim 13, wherein said class I major  
5 histocompatibility complex molecule is an HLA-A2 molecule or an HLA-A3 molecule.

15. The method of claim 14, wherein said class I major  
histocompatibility complex molecule is an HLA-A2 molecule and said peptide  
of hTERT comprises the amino acid sequence of SEQ ID NO:1, or said class I  
10 major histocompatibility complex molecule is an HLA-A3 molecule and said  
peptide of hTERT comprises the amino acid sequence of SEQ ID NO:2.

16. A method of assessing the level of immunity of a patient to hTERT  
or a peptide of hTERT that binds to a major histocompatibility complex  
molecule, said method comprising measuring the level of cytotoxic T  
15 lymphocytes specific for hTERT or said peptide of hTERT in a sample from  
said patient.

17. The method of claim 16, wherein said sample is obtained from said  
patient before or after a cancer treatment is administered to said patient.

18. An hTERT peptide that binds to a major histocompatibility complex  
20 molecule.

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19. The peptide of claim 18, consisting essentially of the amino acid sequence set forth in SEQ ID NO:1 or SEQ ID NO:2.

20. An *ex vivo* generated cytotoxic T lymphocyte that specifically kills a cell expressing hTERT in a specific, major histocompatibility complex-restricted fashion.

21. An *ex vivo* generated antigen presenting cell that presents a peptide of a hTERT in the context of a major histocompatibility complex molecule.

22. A method for identifying a universal tumor associated antigen, said method comprising the steps of:

- a) analyzing one or more databases to identify a gene that is:
  - i) expressed in more than one human tumor type, and
  - ii) expressed in at least one human tumor type at a level that is at least 3-fold higher than the level at which it is expressed in a normal human cell;
- b) using a computer-run algorithm to identify an amino acid sequence in the protein encoded by said gene that is predicted bind to a major histocompatibility complex molecule;
- c) synthesizing an immunogen that comprises the amino acid sequence identified in step b), or a sequence that is predicted by a computer-run algorithm to bind to a major histocompatibility complex molecule with higher affinity than said sequence; and
- d) testing the ability of said immunogen to stimulate a major histocompatibility complex-restricted cytotoxic T lymphocyte response that is specific for said protein.

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23. The method of claim 22, further comprising, after step (d), testing the ability of a major histocompatibility complex-restricted cytotoxic T lymphocyte that is specific for said universal tumor associated antigen and is generated in step (d) to kill a malignant cell expressing said universal tumor associated antigen and not a non-malignant cell.

24. The method of claim 22, further comprising, after step (c) and prior to step (d), using a time-resolved, fluorometry-based assay to measure MHC binding and MHC/peptide complex stability of a peptide comprising the amino acid sequence identified in step (b).

25. The method of claim 22, wherein said major histocompatibility complex molecule is a class I or class II major histocompatibility molecule.

26. The method of claim 22, wherein said testing of said immunogen is carried out by contacting a cytotoxic T lymphocyte with an antigen presenting cell that has been pulsed with said immunogen.

27. The method of claim 26, wherein said antigen presenting cell is a dendritic cell or a CD40-activated B cell.

28. A method of treating a patient that comprises or is at risk of comprising a cell that expresses a universal tumor-associated antigen, said method comprising administering to said patient a cytotoxic T lymphocyte that kills said cell in an antigen-specific, major histocompatibility complex-restricted fashion.

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29. The method of claim 28, wherein said cytotoxic T lymphocyte is autologous to said patient.

30. The method of claim 28, wherein said cytotoxic T lymphocyte is allogeneic to said patient.

5 31. The method of claim 28, wherein said cytotoxic T lymphocyte is generated by activation with an antigen presenting cell that has been pulsed with said universal tumor-associated antigen or a peptide thereof that binds to a major histocompatibility complex molecule.

10 32. A method of treating a patient that comprises or is at risk of comprising a cell that expresses a universal tumor-associated antigen, said method comprising administering to said patient an antigen presenting cell that activates in said patient a cytotoxic T lymphocyte that kills said cell in an antigen-specific, major histocompatibility complex-restricted fashion.

15 33. The method of claim 32, wherein said antigen presenting cell was pulsed with said universal tumor-associated antigen or a peptide thereof that binds to a major histocompatibility complex molecule.

20 34. A method of treating a patient that comprises or is at risk of comprising a cell that expresses a universal tumor-associated antigen, said method comprising administering to said patient said universal tumor-associated antigen or a peptide thereof that binds to a major histocompatibility complex molecule, wherein said antigen or said peptide thereof is processed by an antigen presenting cell in said patient, which activates a cytotoxic T

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lymphocyte in said patient to kill said cell that expresses said antigen in an antigen-specific, major histocompatibility complex-restricted fashion.

35. The method of claim 34, wherein universal tumor-associated antigen or said peptide thereof is administered to said patient in association with an adjuvant.

36. A method of treating a patient that comprises or is at risk of comprising a cell that expresses a universal tumor-associated antigen, said method comprising administering to said patient a nucleic acid molecule encoding said antigen or a peptide thereof that binds to a major histocompatibility complex molecule, wherein said nucleic acid molecule is expressed in said patient so that it can be processed by an antigen presenting cell in said patient, which activates a cytotoxic T lymphocyte in said patient to kill said cell that expresses said antigen in an antigen-specific, major histocompatibility complex-restricted fashion.

37. The method of claim 36, wherein said nucleic acid molecule encoding said universal tumor-associated antigen or said peptide thereof is in an expression vector.

38. The method of claim 28, 32, 34, or 36, wherein said patient comprises a tumor comprising cells that express said universal tumor-associated antigen.

39. The method of claim 31 or 32, wherein said antigen presenting cell is a dendritic cell or a CD40-activated B cell.

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40. The method of claim 31, 33, 34, or 36, wherein said peptide of said universal tumor-associated antigen binds to a class I major histocompatibility complex molecule.

41. The method of claim 40, wherein said class I major  
5 histocompatibility complex molecule is an HLA-A2 molecule or an HLA-A3 molecule.

42. A method of assessing the level of immunity of a patient to a universal tumor-associated antigen or a peptide thereof that binds to a major histocompatibility complex molecule, said method comprising measuring the  
10 level of cytotoxic T lymphocytes specific for said antigen or said peptide thereof in a sample from said patient.

43. The method of claim 42, wherein said sample is obtained from said patient before, during, after, or before and after a cancer treatment is administered to said patient.

44. A universal tumor-associated antigen or a peptide thereof that binds  
15 to a major histocompatibility complex molecule.

45. An *ex vivo* generated cytotoxic T lymphocyte that specifically kills a cell expressing a universal tumor-associated antigen in a specific, major histocompatibility complex-restricted fashion.

46. An *ex vivo* generated antigen presenting cell that presents a peptide  
20 of a universal tumor-associated antigen in the context of a major



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histocompatibility complex molecule.

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